3. *Conclusion*:

Recent advances in mapping and ablation of focal tachycardia provide a safe and successful curative therapy. However, recognition of such tachycardia is the key factor for successful management. A standard 12-lead surface ECG provides a simple and non-invasive method that can help in determining the origin of tachycardia.

Figure 1. Pre-ablation twelve leads electrocardiogram showed left atrial tachycardia, rate of 160 beats/min, note the inverted P wave at lead I, aVL, and upright P-waves at inferior leads and V_1.

Figure 2. Three dimensional left atrial geometry by non-contact mapping system (NAV-X-Endocardial Solutions, Inc. (ESI), St. Paul, Minnesota) showed the atrial tachycardia focus adjacent to the left superior pulmonary vein.

Figure 3. Post ablation twelve leads electrocardiogram showed sinus tachycardia rate of 120 beat/min. Note the normalization of the P-wave axis.

References

[1] Cruz FE, Cheriex EC, Smeets JL, et al. Reversibilty of tachycardia induced cardiomyopathy after cure of incessant SVT. J Am Coll Cardiol 1990;16:739–44.
[2] Chugh SS, Shen WK, Luria DM, et al. First evidence of premature ventricular complex induced cardiomyopathy: a potentially reversible cause of heart failure. J Cardiovasc Electrophysiol 2000;11:328–9.
[3] Redfield MM, Kay GN, Jenkins LS, et al. Tachycardia related cardiomyopathy: a common cause of ventricular dysfunction in patients with atrial fibrillation referred for AV node ablation. Mayo Clinic Proc 2000;75:790–5.
[4] Calò L, De Ruvo E, et al. Tachycardia-induced cardiomyopathy: mechanisms of heart failure and clinical implications. J Cardiovasc Med (Hagerstown) 2007;8(3):138–43.
[5] Moe GW, Montgomery C, Howard RJ, et al. Left ventricular myocardial blood flow, metabolism and effects of treatment with enalapril: further insights into the mechanisms of canine experimental pacing-induced heart failure. J Lab Clin Med 1993;131:294–302.
[6] Sasayama S, Asanoi H, Ishizaka S, et al. Continous measurement of the pressure volume relationship in experimental heart failure produced by rapid ventricular pacing in conscious dogs. Eur Heart J 1992;13(Suppl):47–51.
[7] Spinale FG, Clayton C, Tanaka R, et al. Myocardial Na, K-ATPase in tachycardia Induced cardiomyopathy. J Mol Cell Cardiol 1992;24:277–89.
[8] Yonemochi H, Yasunaga S, Teshima Y, et al. Rapid electrical stimulation of contraction reduces the density of beta-adrenergic receptors and responsiveness of cultured neonatal rat cardiomyocytes. Possible involvement of microtubule disassembly secondary to mechanical stress. Circulation 2001;101:2625–38.
[9] Mihm MJ, Yu F, Carnes CA, et al. Impaired myofibrillar energetics and oxidative injury during human atrial fibrillation. Circulation 2001;104:174–82.
[10] Jovanovic S, Grantham AJ, Tarara JE, et al. Increased number of cardiomyocytes in cross sections from tachycardia induced cardiomyopathy hearts. Int J Mol Med 1999;3:153–5.
[11] Kloner RA, Deboer LWV, Darsee JR, et al. Recovery from prolonged abnormalities of canine myocardium salvaged from ischemic necrosis by coronary reperfusion. Proc Natl Acad Sci USA 1992;78:7152–63. Eur Heart J 1992;13:47–58.
[12] Tanaka R, Fulbright BM, Mukherjee R, Burchell SA, Crrawford FA, Zile MR, et al. The cellular basisi for the blunted response to betaadrenergic stimulation in supraventricular tachycardia-induced cardiomyopathy. J Mol Cell Cardiol 1993;25(10):1215–33.
[13] He J, Conklin MW, Foell JD, Wolff MR, Haworth RA, Coronado R, et al. Reduction in density of transverse tubules and L-type Ca(2+) channels in canine tachycardia induced heart failure. Cardiovasc Res 2001;49(2):298–307.
[14] Saavedra WF, paolocci, N, St john ME, Skaf MW, stewart GC, Xie JS, et al. Imbalance between xanthine oxidase and nitric oxide synthase signaling pathways underlies mechanoenergetic uncoupling in the failing heart. Circ Res 2002;90(3):297–307.
[15] Josephson M, editor. Supraventricular tachycardias. Clinical cardiac electrophysiology: techniques and interpretations. Philadelphia, PA: Lippincott Williams & Wilkins; 2001. p. 169–271.
[16] Lee BK, Olgin JE. Ablation of focal atrial tachycardia. In: S Huang SK, Wood MA, editors. Catheter Ablation of Cardiac Arrhythmias. Philadelphia, PA: Elsevier; 2006.

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Drug eluted balloon has the potential to treat in-stent restenosis and small vessels disease

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Background: In-stent restenosis still a major problem after percutanous coronary intervention. One-quarter of DESs can result in restenosis, paclitaxel-coated coronary balloons showed an advantage in patients with in-stent restenosis in different clinical studies, small vessels disease is a challenge in coronary intervention

Methods: Single center study in our cath lab between Jan 2010–Oct 2011, a total of 36 patients, with either in-stent restenosis more than 50%, or small vessel disease, under went balloon angioplasty using a **Dior** Eurocor, Drug Eluted Balloon to treat those lesions. And patients were prepared in the same way of regular PCI, given heparin and clopidogrel loading and maintenance dose accordingly. We are planning to f/u the patients clinically for 6 months to 2 years.

Results: Total of 36 patients, 10 (28%) patients had in-stent restenosis treated by DEB. 26 (72%) patients had a small vessels disease, diameter <2.5 mm treated with DEB and balloon size range from 2.0 to 2.25 mm. The incidence of diabetes mellitus was 70%. Hypertension 67%. Majority of patients are male patients (26). The disease was involving all vessels including RCA, PDA, LAD/DIAG, LCX/OM. Since we started this technique we have no target vessel re-vasularization in those 36 patiens.

Conclusion: The vast majority of our patients are diabetic and this technique could resolve the PCI limitations in those patients even after DES implantation.

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Predicting occult paroxysmal atrial fibrillation (AF) in transient ischemic attack (TIA) or strokes

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Relevance: AF accounts for 75,000 cases of strokes per year, yet 40% of strokes may have no apparent etiology. Etiology of these strokes may be occult PAF. The laboratory and echocardiography markers may help identify those at risk of PAF.

Purpose: Paroxysmal AF (PAF) is a significant risk factor for TIA/stroke. However, routine Holters/ECG often fail to detect PAF. Our aim was to evaluate laboratory and echocardiographic parameters to predict PAF.

Participants: 428 patients were enrolled, 220 males and 208 females, 51% and 49%, respectively, a mean age of 72.3 years. PAF present group 68 patients (16%) versus PAF absent group 360 patients (84%).

Method: The 24 h-Holters recorded for evaluation of TIA/strokes were analyzed for PAF. Patients were divided into PAF present or absent groups.

Analysis: Multivariate regression analysis was used to investigate BNP (Brain Natriuretic Peptide), D-dimer, mitral regurgitation (MR), left atrial size (LA), left ventricular hypertrophy (LVH) and diastolic dysfunction.

Results: BNP, MR, LA size, LVH, diastolic dysfunction were significantly higher in patients showing PAF on their Holters than those without PAF. Multivariate logistic regression analysis demonstrated BNP 400 pg/ml (OR, 14.8; 95% CI 6.5–45, $P < 0.01$), MR (OR, 8.1; 95% CI 3.12–26.2, $P < 0.001$), LA size 4.0 cm (OR, 5.2; 95% CI 2.01–14.6, $P < 0.002$), LVH 1.2 cm (OR, 4.9; 95% CI 1.2–6.88, $P < 0.001$), diastolic dysfunction (OR, 6.7; 95% CI 2.3–27.2, $P < 0.021$).

Conclusion: Patients with cryptogenic TIA and associated elevated BNP, LVH, MR, enlarged LA, and diastolic dysfunction may have PAF as an etiology.

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Clinical presentation and short term outcome of acute coronary syndromes in native young saudi population

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Background: Literature about acute coronary syndromes (ACS) in young population in the Middle East is scarce. Moreover, such data in native young Saudi Arabians is lacking.

Methods: We retrospectively reviewed our data base between January 2006 and May 2009, 924 patients were diagnosed to have ACS. Among them 107 patients (11.6%) met our definition of young [66 (61.7%) male $\leqslant$ 45 years, and 41 (38.3%) female $\leqslant$ 55 years].

Results: The overall age was 42.3 ± 7.9 years. Diabetes mellitus prevalence was 36.4% in males and 63.4% in females, while 30.0% of males and 34.1% of females had hypertension. Active smoking was reported in 40.9% of the males but none of the females. A body mass index $\geqslant$ 25 was found in 30.3% of males and 34.1% of females. Overall 21.5% of the patients had dyslipidemia. Past history of coronary artery disease was documented in 18 patients (16.8%). The discharge diagnoses were ST-segment elevation myocardial infarction in 41 (38.3%) patients, non-ST-segment elevation MI in 36 patients (33.6%) and unstable angina in 30 (28.0%) patients. Coronary angiography was performed in 86 patients (80.4%), among them 42 patients (48.8%) had single vessel and 24 patients (27.9%) had $\geqslant$ 2 vessel disease. One patient had in-hospital acute ischemic stroke and more women (29.3%) were discharged with clinical diagnosis of heart failure.

Conclusions: Several common cardiovascular risk factors have alarming incidences in native young Saudi adults presented with ACS. This finding necessitates an aggressive approach for population based intervention.

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Comparison of echocardiography and CT angiography for measurement of aortic annulus diameters before transcatheter aortic valve implantation

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Objectives: Accurate assessment of the aortic annulus diameter is crucial for successful transcather aortic valve implantation (TAVI). We compared the aortic annulus diameter obtained by echocardiography and computed tomography (CT) angiography in patients referred for TAVI.

Methods: On echo, the aortic annulus diameter was measured from parasternal long axis view in systole. An average of two measurements was calculated. On CT, the annulus was measured in cross-sectional view (perpendicular to the flow axis). Three diameters were obtained; maximum (*Dmax*), minimum (*Dmin*) and the mean (*Dmean*) (from cross-sectional area (CSA)) diameters (Fig. 1). The echo and CT measurements were performed independently. The degree of agreement was assessed by Bland-Altman plot.

Results: Twenty-eight patients (mean age 76 ± 8 years, males were 21) with severe symptomatic aortic stenosis comprised the study population. The aortic annulus diameters were 22 ± 1.4 mm on echo and 26.6 ± 2.8 mm, 20.4 ± 1.9 mm and 23.5 ± 1.9 mm on CT *Dmax*, *Dmin* and *Dmean*, respectively. Regardless of the CT method, there was good agreement between the echo and CT measure